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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,595	11/15/2001	Junichi Hirakata	HITA.0116	7389

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EXAMINER
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PATEL, NITIN

ART UNIT	PAPER NUMBER
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2673

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DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/987,595

**Applicant(s)**

HIRAKATA ET AL.

**Examiner**

Nitin Patel

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17,29,30,32,33,37 is/are pending in the application.
- 4a) Of the above claim(s) 18-28,31,34-36 and 38-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17,29,30,32,33 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hishihara (JP 07013128 A).

As per claim 1 Nishihara shows liquid crystal display device (In translated version of this patent)(In constitution) having a backlight (In Constitution) being characterized in that the backlight has a first state (On State) in which the backlight outputs a first amount of light (timing circuit output amount of lights) and a second state (Off state) in which the backlight outputs a second amount of light (timing circuit output amount of lights), and the time for the first state and the time for the second state are controlled (by a current controller to control the display).Nishihara does not specifically teach the amount of lights in different modes, it would have been obvious to one of ordinary skill in the art, by having two modes(on/off) of Nishihara's would have generated amount of lights to control the display in two modes with a timer to control the display so it would reduce the power consumption.

As per claim 2, Nishihara shows liquid crystal display device having a backlight being characterized in that the backlight has a first state (on state) in which a first

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voltage is applied to the backlight (In constitution) and a second state (off state) in which a second voltage is applied to the backlight (In constitution), and the time for the first state and the time for the second state are controlled (controlled by a timer circuit). Nishihara does not specifically teach the amount of lights in different modes, it would have been obvious to one of ordinary skill in the art, by having two modes (on/off) of Nishihara's would have generated amount of lights to control the display in two modes with a timer to control the display so it would reduce the power consumption.

3. Claims 3-18,29,32,33,37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara (US 2002/0000960 A1).

As per claims 3, 4 Yoshihara shows liquid crystal display device (In abstract) having a liquid crystal display panel which includes a plurality of scanning lines (In fig.1 LCD display) and a backlight being characterized in that a first voltage and a second voltage are applied at a given frame and the given frame (element 31 to control display frames) is in synchronism with a frame to control a plurality of scanning lines (In col.3 section 0033 and 0037 and 0038 and 0040). Yoshihara does not specifically teach extinguishing and lighting for controlling the display. It would have been obvious to one of ordinary skill in the art, at the time of the invention was made that having two plates of Yoshihara's of light guiding plate and light diffusing plate would have cause the similar functionality to control the display with different comparison to control the display.

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As per claim 5, Yoshihara shows a liquid crystal display device including a liquid crystal panel (In Abstract) having switching elements which are driven with the supply of gate signals from gate signal lines and pixel electrodes to which drain signals are supplied from drain signal lines through the switching elements (In display In fig.1), and a backlight which is arranged on a back surface of the liquid crystal display panel in each pixel region on a liquid-crystal-side surface of one of respective substrates which are arranged to face each other in an opposed manner while sandwiching a liquid crystal there between (In Fig.3), wherein the backlight includes means which repeats the lighting and extinguishing in synchronism with the starting of the supply of scanning signals and controls the ratio between the lighting time and the extinguishing time(In Col.6 section 0071).

As per claim 3 Yoshihara shows a liquid crystal display in the lighting and the extinguishing of the backlight is performed once for each frame between a synchronous signal for data rewriting and a next synchronous signal for data rewriting (In Col.5).

As per claim 7, Yoshihara shows a display device having a liquid crystal display panel and a backlight which is arranged on a back surface of the liquid crystal display panel, wherein the liquid crystal display panel includes a liquid crystal display portion which is formed of a mass of a large number of pixels in the direction that liquid crystal interposed between a pair of substrates expands and

respective pixels have pixel electrodes to which video signals are independently supplied, the liquid crystal display device includes detection means which detects the magnitude of the change of video signals to the pixel electrodes of respective pixel regions as the whole of the liquid crystal display portion, and backlight blinking means which makes the backlight repeat the lighting and the extinguishing when it is detected by the detecting means that the change of the video signals is large(In Col.6) and In Fig.5-10).

As per claim 7, Yoshihara teaches a liquid crystal display device wherein the liquid crystal display device includes backlight blinking control means which, when the change of the video signals detected by the detecting means is large, decreases the duty of the lighting time in response to the degree of the magnitude of the change of the video signals (In Col.6 section 0071).

As per claim 9, Yoshihara teaches a liquid crystal display device wherein the backlight blinking control means includes means, which increases an electric current supplied to the backlight when the duty of the lighting time is small (In Fig. 12 and in section0087 and 0088).

As per claim 10, Yoshihara shows a liquid crystal display device having a liquid crystal display panel and a backlight which is arranged on a back surface of the liquid crystal display panel, wherein the liquid crystal display panel includes a liquid crystal display portion which is formed of a mass of a large number of

pixels in the direction that liquid crystal interposed between a pair of substrates expands and respective pixels have pixel electrodes to which video signals are independently supplied, the liquid crystal display device includes detection means which detects the magnitude(In Fig.10 and In section 0069) of the change of video signals to the pixel electrodes of respective pixel regions as a region of a portion of the liquid crystal display portion, and backlight blinking means which makes the backlight repeats the lighting and the extinguishing when it is detected by the detecting means that the change of the video signals is large(In section 0070).

As per claim 11, Yoshihara shows a liquid crystal display device (In Abstract) wherein respective regions which are surrounded by gate signal lines which are extended in the x direction and are arranged in parallel in the y direction and drain signal lines which are extended in the y direction and are arranged in parallel in the x direction on a liquid-crystal-side surface of one substrate of the liquid crystal display panel are defined as pixel regions and each pixel region is provided with a switching element which is driven by scanning signals from a one-side gate signal line and a pixel electrode to which video signals are supplied from the drain signal line through the switching element(In Fig.1), and the region of the portion of the liquid crystal display portion constitutes a region of a mass of respective pixel regions which are provided with pixel electrodes driven by some of the gate signal lines which are arranged close to each other(In

Fig.7).

As per claim 11-14, Yoshihara shows a liquid crystal display device wherein the region of the portion of the liquid crystal display portion constitutes a region of a mass of respective pixel regions which are provided with pixel electrodes driven by respective gate signal lines which run substantially at the center of the liquid crystal display portion (In fig.1 and In section 0033 and 0034).

As per claim 14, Yoshihara shows a liquid crystal display device wherein the backlight blinking control means includes means which increases an electric current supplied to the backlight when the duty of the lighting time is small (In section 0071).

As per claim 16, Yoshihara shows a liquid crystal display device having a liquid crystal display panel (In Fig.1) and a backlight which is arranged on a back surface of the liquid crystal display panel, wherein the liquid crystal display panel includes a liquid crystal display portion which is formed of a mass of a large number of pixels in the direction that liquid crystal interposed between a pair of substrates expands and respective pixels have pixel electrodes to which video signals are independently supplied and a counter electrode which generates an electric field in response to the video signals between the pixel electrodes and



the counter electrode, the liquid crystal display device includes detection means which detects the magnitude of video signals to the pixel electrodes of respective pixel regions as an average of the whole of the liquid crystal display portion when the video signals are large corresponding to the increase of the light transitivity of the liquid crystal due to the electric field, and backlight blinking means which makes the backlight repeat the lighting and the extinguishing when it is detected by the detecting means that the video signals become large(In fig.10 section 0069 and 0070).

As per claim 17, Yoshihara shows liquid crystal display device wherein the liquid crystal display device includes backlight blinking control means which, when the video signals detected by the detecting means are large, decreases the duty of the lighting time in response to the degree of the magnitude of the video signals (In section 0071).

As per claims 29,32,33 Yoshihara shows A liquid crystal display device (In Fig.1) having a liquid crystal display panel in which respective pixel groups to which video signals are supplied are selected in response to scanning signals supplied to gate signal lines (In Fig.1 LCD display) and a backlight which is arranged on a back surface of the liquid crystal display panel, wherein the backlight includes a plurality of linear light sources which are provided to a surface substantially parallel to a surface of the liquid crystal display panel, are extended in the direction parallel to the gate signal lines and are arranged in parallel in the

direction which intersects the direction parallel to the gate signal lines(In section 0031), and the light source disposed at least a center portion repeats the lighting and the extinguishing(In section 0033) light and the light source disposed at least at one of both sides of the center portion maintains the lighting, and at least one of the light source disposed at the center portion and one of the light sources disposed at least at one of both sides of the light source disposed at the center portion are capable of controlling the magnitude of a supply current or a supply voltage. Yoshihara does not specifically teach extinguishing and lighting for controlling the display. It would have been obvious to one of ordinary skill in the art, at the time of the invention was made that having two plates of Yoshihara's of light guiding plate and light diffusing plate would have cause the similar functionality to control the display with different comparison to control the display.

As per claim 32 Yoshihara shows liquid crystal display device having a liquid crystal display panel which includes a plurality of scanning lines and a backlight (In fig.1), wherein the backlight is configured to irradiate a plurality of amounts of light which differ along with the lapse of time within a frame in which a plurality of scanning lines are controlled to the liquid crystal display panel side (In Fig.5, 7,10), and in performing screen scanning in plural times, the scanning is performed such that the screen becomes a black display in one screen scanning(display mode of on/off in section 0031).Yoshihara does not specifically show display being black display according to a mode it would have been obvious to one of ordinary skill in that art, at the time of the

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invention was made that display being on is regular mode of display and in off state display is being black or dark that have no power being supplied.

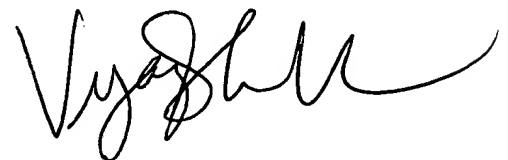
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Patel whose telephone number is 703-308-7024. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin H Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NP  
April 19, 2004



**VIJAY SHANKAR  
PRIMARY EXAMINER**